

# Real Power Losses Whitepaper

## Draft\_042403

The purpose of this paper is four-fold: (1) provide background regarding BPA's Transmission Business Line's (TBL) current practice on the return of losses; (2) provide context for this issue by describing how some other Transmission Providers in the region handle losses settlement and current Federal Energy Regulatory Commission (FERC) policy; (3) describe the issues raised by the Losses Workgroup regarding TBL's Business Practice as well as principles that the group adopted for the purpose of formulating an alternative practice; and, (4) describe the preferred outcome. We have attempted to address issues raised during the Business Forum discussions in the text.

This ***draft*** whitepaper has been reviewed by the workgroup dealing with Real Power Losses and would benefit from review by the larger group engaged in reviewing this and other Business Practices.

### (I) Background

TBL's practice (See Reservation and Scheduling Procedures Business Practice):

- TBL requires a Transmission Customer to have one party responsible for the delivery of losses for all transmission contracts between itself and the BPA TBL.
- TBL allows a Transmission Customer to change loss providers up to twice/year on a 60 days' notice.
- Real Power Losses are replaced in accordance with BPA TBL's OATT, Schedule 9 and the applicable Service Agreement.
- Losses are settled by physical return 168 hours later (seven days); one complete day of hourly schedules/contract (0000 – 2400 hours) are returned to the TBL Network where the loss provider interconnects with TBL's Network.
- Hourly loss obligations are truncated to whole MW-hour quantities with any remainder carried-over and added to the next hour's obligation.
- Losses provided by the PBL are delivered concurrently with power transactions.
- The RODS scheduling system stands in the way of introducing much if any flexibility to the losses settlement issue; at a minimum, this effort should be used to design flexibility into the information system modules currently being scoped.

## (II) Context

How other Transmission Providers in the WECC handle losses settlement:

- Avista: [tbd]
- BC Hydro: allows financial and physical (concurrent) returns.
- CAISO: supplier settles concurrently based upon a distribution multiplier that is applied to the settlement price for energy.
- Idaho: legacy contracts require physical returns (168-hours later; new contracts allow for either in-kind physical settlement (OASIS) or concurrent.
- PGE: physical return, 168 hours later; the customer may choose daily whether to purchase or schedule a return.
- Montana: concurrent, physical return for all transactions.
- WAPA: in process of changing current process.
- PacifiCorp: for short-term and nonfirm, allows financial and physical (72-hour delay) returns.
- PSE: allows for physical and financial settlement and customers can make their elections once/month.
- Sierra/Pacific: allows for physical return and customers can make elections once/year with three months' notice.

FERC perspective:

- The *pro forma* tariff does not prescribe any particular method for accounting for losses.
- Loss Compensation is regarded as being an Interconnected Operations Service (IOS), not an Ancillary Service, and so it can be provided on a voluntary basis.
- FERC has allowed financial settlement of losses obligations, however, it has the authority to approve the valuation proposed by the Transmission Provider.
- If a Transmission Provider allows financial settlement, it must also allow physical settlement.
- FERC appears to prefer physical returns to be done concurrently when a customer schedules its transactions with the Transmission Provider. However, FERC has recently allowed delayed physical returns but only on an interim basis.
- FERC has allowed transmission customers choice among settlement options, e.g., elections on an annual basis, every six months, more frequent, etc.
- It appears that FERC prefers that losses not be bundled in open access tariff transportation rates.
- FERC anticipated the potential for a losses market, which is consistent with the goal of fostering competition in energy markets.
- FERC wants customer flexibility just as long as it is not detrimental to the system.

(III) Issues Associated with Current Business Practice:

- Customers want to have more flexibility in terms of loss settlement, e.g., physical and financial settlement.
- Customers want to be able to treat losses like any other Buy/Sell arrangement and thereby create a market for losses.
- Customers want current settlement options to remain in place even if additional flexibilities are introduced.
- Customers want to be allowed to change loss providers more frequently than currently allowed.
- Customers want the ability to return losses as a schedule which would allow aggregation of losses obligations and not being limited in terms of POR designations.
- Customers don't want to have to segregate loss returns by contract type, e.g., FPT, IR, PTP, NT, etc.
- Customers want reconciliation issues to be addressed in a more timely and effective reconciliation procedure as compared with the current practice.

Workgroup Principles:

- More flexibility in terms of the Business Practice.
- Identification of a cost-conscious solution for TBL and its customers.
- Ensure administrative ease for TBL and its customers.

(IV) Potential Options:

- Physical settlement
  - concurrent returns<sup>1</sup>; and,
  - self-provision/third-party returns 168 hours later<sup>2</sup>
- Financial settlement

Currently, TBL has approval from FERC for physical returns (168-hours later) but does not have approval for financial settlement. Therefore, for the immediate rate period, it appears that physical returns is the only viable option unless TBL and its customers decide to file a change to TBL's rate schedule.

The RODS system is regarded as the root of the problem in terms of limiting flexibility that could be associated with losses settlement. RODS will not

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<sup>1</sup> Concurrent returns refer to two conditions: (1) where losses are delivered concurrently with each "parent" schedule and therefore, the loss return is a function of the underlying schedule; and, (2) where a single loss schedule is submitted for the purpose of satisfying an aggregated loss obligation, e.g., for all transactions during a particular hour.

<sup>2</sup> The group assumed that delayed physical settlement would be on a 168-hour basis; alternative periods of delay were not discussed.

allow mid-month changes in a loss provider; RODS requires loss returns to be contract-specific; RODS requires the POR of a transaction to be the POR of the losses return, etc.

It is assumed that after the upcoming rate period, FY 2006, there is no reason to prohibit Transmission Customers from choosing between physical and financial settlement. It is also assumed that the “next generation” information system should be able to track the desired flexibilities for losses settlement. Nevertheless, there will still be a number of implementation issues that will need to be addressed:

- Physical return method – if different from current practice
    - Concurrent
      - By “parent” schedule
      - By aggregated obligation
    - Delayed return
      - 168 hours
      - Other, e.g., 72 hours.
    - Allowed flexibilities
      - No need to recognize contract type
      - Allow POR flexibilities
  - Financial Settlement
    - Valuation of losses (some form of pricing proxy)
      - Market hub prices
      - Cost of replacement energy
      - Other
    - Adjustment for time-differentiation
      - Seasonal
      - Time-of-day
  - Election Options
- Physical Settlement Alternative
    - a. Concept – this “option” plays off of TBL’s current practice but introduces some additional flexibilities.
    - b. Concurrent – one of the main issues that the workgroup associated with concurrent losses had to do with reconciliation and the complication that could be introduced by returning losses on schedules that had not been checked-out or reconciled.

The term “concurrent” was used in reference to at least two different conditions: (1) where losses are delivered concurrently with each “parent” schedule and therefore, the loss return is a function of the underlying schedule; and, (2) where a single loss schedule is

submitted for the purpose of satisfying an aggregated loss obligation, e.g., for all transactions during a particular hour. Either of these approaches is doable although, the latter seems to provide greater flexibility. To the extent TBL would allow aggregation of loss obligations, there would need to be allowances made for not having to segregate returns by contract type.

- c. Delayed Return – the group seemed comfortable with the current practice of delayed returns, i.e., 168 hours later. In fact, the group concluded that certainty of obligation (reconciled amount) out-weighed the price or value certainty that would be gained by concurrent return. The group's conversation did not have the benefit of FERC policy which appears to prefer concurrent returns and discourage delayed returns. Delayed returns could still allow for aggregation of loss obligations.
- d. Return Obligation – the group identified an issue with physical returns that TBL currently deals with by “rolling up” obligations into 1 MW-hour quantities. The group discussed the possibility of requiring financial settlement for those total hourly schedules that are less than 53 MW (53 MW \* 1.9% equals 1 MW), however, this may be an issue for TBL's customers and for FERC.
- e. Points of Receipt – whether concurrent or delayed settlement, the group was interested in allowing returns to be from any POR (any interchange point between a loss provider and BPA), recognizing that the Information Systems that TBL would ultimately use would need to be capable of tracking losses obligations (e.g. either individual contractual obligations or aggregated obligations) with returns.
- f. Reconciliation – the group recognized that reconciliation between scheduled and actual transactions would still be necessary and concluded that delayed return of losses would aid this effort.
- g. Exercising Options – the group concluded that customers should have the ability to choose between physical and financial settlement and more often than once every six months, e.g., once every month, as long as the administrative burden wasn't too great as a result.
- h. TBL's Role – TBL would track hourly loss returns and reconcile such with aggregated hourly loss obligations. Monthly accounting of losses would be part of the monthly billing procedures. Issues regarding the accuracy of bills would be handled in accordance with the OATT and a due process procedure which would impose a deadline on reconciliation between TBL and its customers would be developed and implemented.

FERC policy doesn't appear to prohibit TBL from selling losses as an Interconnected Operations Service (IOS). TBL would have to contract with PBL or other suppliers, however, if it decided to offer this service.

- i. PBL's Role – PBL could continue to be a supplier of losses at least for those customers for whom it acts as Transmission Contract Holder and potentially, for others choosing physical settlement.
  - j. Failure to Return – Any failure to return losses would need to be made up within a mutually-agreed upon time period (between TBL and the Transmission Customer), but not later than 168-hours later.
- Financial Settlement Alternative
    - a. Concept – This option would result in all transmission schedules using TBL's system having the option to settle losses on a financial basis. This means that losses would be valued by a proxy price, e.g., an index such as the price paid for replacement energy or the Dow Jones nonfirm energy index associated with various markets, e.g., the Mid-C, COB, etc. and weighted by on- and off-peak. At the end of each month, a transmission customer would pay TBL the sum total of the hourly amount of the losses obligations multiplied by the applicable indexed price(s). Assuming current loss percentages, transactions over the Network would include an additional 1.9%; transactions involving the Utility Delivery Segments would include an additional 0.6% (for DSI Delivery Segments, as specified in the Service Agreement) and, for use of the Southern Intertie Segment would include an additional 3.0%.
    - b. Size – This option would be available for all transactions no matter how large or small.
    - c. Reconciliation – the group concluded that reconciliation between scheduled and actual transactions would be accompanied with a reconciliation of losses.
    - d. Exercising Options – the group concluded that the transmission customer could exercise its option between financial and physical settlement frequently, unless this proved to be administratively infeasible.
    - e. Aggregation of Schedules – The financial settlement would be done on a monthly basis; therefore, all hourly schedules for any given month multiplied by the applicable index value would be aggregated into one single payment for each monthly loss obligation. An index would be

agreed-upon by TBL and its customers and would probably need to be reviewed and revised on occasion.

- f. TBL's Role – TBL would identify the market index for valuing losses. TBL would track loss returns and reconcile such with loss obligations. Monthly accounting of losses would be part of the monthly billing procedures. Issues regarding the accuracy of bills would be handled in accordance with the OATT and a due process procedure which would impose a deadline on reconciliation between TBL and its customers.
- g. PBL's Role – PBL would continue to be a potential supplier of physical settlement for those customers choosing that option.
- h. Failure to Return – Any failure to pay for the full quantity of losses would need to be reconciled within a mutually-agreed upon time period (between TBL and the Transmission Customer), but not later than by the end of the next month's settlement deadline.

(V) Conclusion:

TBL's current information system and Business Practice limit the flexibility that customers want for settling losses obligations, e.g., some want greater flexibilities in terms of physical returns and others want financial settlement. For the time being, i.e., during the upcoming two year rate period, it appears that physical returns will be the only viable option, unless TBL and its customers decide to petition for a change to the rate schedules. However, a better information tracking system (post RODS) is needed so that schedules (which create a losses obligation) and loss returns are easily tracked and therefore, allow greater flexibility in terms of settlement returns.

Immediately, this report should be used to inform design decisions regarding information systems that will be used for losses settlement. Between now and the end of the upcoming rate period, TBL and its customers should develop a financial return settlement scheme that could be used as an option to physical settlement.